

SEQUENCE LISTING

<110> Allen, Steve
Lightner, Jonathan
Rafalski, Antoni

<120> BRITTLE-1 HOMOLOGS

<130> BB1157 US CIP

<140> 09/796,766

<141> March 1, 2001

<150> 09/668884

<151> 2000-09-25

<150> PCT/US99/06583

<151> 1999-03-22

<150> 60/079420

<151> 1998-03-26

<160> 21

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<211> 539

<212> DNA

<213> Hordeum vulgare

<400> 1

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cctctgcccc aactaattg gcatgcttcc ttacagcaca tgctactact ttatgtacga 420
tacaatcaag acgtcgtact gccgcctaca taagaagaaa tccttgagcc gtcctgagct 480
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<211> 112

<212> PRT

<213> Hordeum vulgare

<400> 2

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      20                      25                      30

Ser Ile Ser Ile Ala Phe Ser Lys Ile Tyr Arg Thr Glu Gly Ile Arg
      35                      40                      45

Gly Leu Tyr Ser Gly Leu Cys Pro Thr Leu Ile Gly Met Leu Pro Tyr
      50                      55                      60
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Ser Thr Cys Tyr Tyr Phe Met Tyr Asp Thr Ile Lys Thr Ser Tyr Cys
65 70 75 80

Arg Leu His Lys Lys Lys Ser Leu Ser Arg Pro Glu Leu Leu Ile Ile
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gtgccatcct cttgaagtta ttaaggatcg gctgaccgtg gatcgagtga cttatcctag 300
cattagcatt gccttcagca agatatatcg aactgaagggt atcagaggtc tctattctgg 360
cctctgcccc aactaattg gcatgcttcc ttacagcaca tgctactact ttatgtacga 420
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<210> 4
<211> 252
<212> PRT
<213> Hordeum vulgare

<400> 4
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20 25 30

Gly Met Arg Ser Ala Gln Glu Lys Trp Lys Glu Asp Gly Cys Pro Lys
35 40 45

Ile Gln Leu Gly Asn Met Asn Ile Glu Ile Pro Leu His Leu Leu Ser
50 55 60

Pro Val Ala Ile Ala Gly Ala Ala Ala Gly Ile Ala Gly Thr Leu Met
65 70 75 80

Cys His Pro Leu Glu Val Ile Lys Asp Arg Leu Thr Val Asp Arg Val
85 90 95

Thr	Tyr	Pro	Ser	Ile	Ser	Ile	Ala	Phe	Ser	Lys	Ile	Tyr	Arg	Thr	Glu			
			100					105					110					
Gly	Ile	Arg	Gly	Leu	Tyr	Ser	Gly	Leu	Cys	Pro	Thr	Leu	Ile	Gly	Met			
		115					120					125						
Leu	Pro	Tyr	Ser	Thr	Cys	Tyr	Tyr	Phe	Met	Tyr	Asp	Thr	Ile	Lys	Thr			
	130					135					140							
Ser	Tyr	Cys	Arg	Leu	His	Lys	Lys	Lys	Ser	Leu	Ser	Arg	Pro	Glu	Leu			
	145				150					155					160			
Leu	Ile	Ile	Gly	Ala	Leu	Thr	Gly	Leu	Thr	Ala	Ser	Thr	Ile	Ser	Phe			
			165					170						175				
Pro	Leu	Glu	Val	Ala	Arg	Lys	Arg	Leu	Met	Val	Gly	Ala	Leu	Gln	Gly			
			180					185					190					
Lys	Cys	Pro	Pro	Asn	Met	Val	Ala	Ala	Leu	Ser	Glu	Val	Ile	Arg	Glu			
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Glu	Gly	Leu	Leu	Gly	Ile	Tyr	Arg	Gly	Trp	Gly	Ala	Ser	Cys	Leu	Lys			
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Val	Met	Pro	Asn	Ser	Gly	Ile	Thr	Trp	Met	Phe	Tyr	Glu	Ala	Trp	Lys			
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Asp	Ile	Leu	Leu	Ala	Glu	Lys	Asp	Lys	His	Leu	Asp							
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 <212> DNA
 <213> *Oryza sativa*

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 <223> n = a, c, g or t

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 <223> n = a, c, g or t

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 <222> (325)

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<222> (352)

<223> n = a, c, g or t

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<222> (372)

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<222> (418)..(419)

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<223> n = a, c, g or t

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<222> (436)

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436

<210> 6
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<213> Oryza sativa

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<223> Xaa = any amino acid

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Gly Ala Leu Ser Gly Leu Thr Ala Ser Thr Ile Ser Phe Pro Leu Glu
20 25 30
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35 40 45

<210> 7
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<212> DNA
<213> Glycine max

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aactctacct ttgattttca atttccccc attacaaatt ttcttggtc tagagaggtt 360
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ggttatagag cagcagggat ggcaaggact gtgggctgga aacatgatca atatgcttcg 540
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gttggaaatg tcacatttac taacgagtta ggtacctagc ttgtaagttt ccagattttg 1440
atattgattt gggaagattc tcatctaagt taaagggttaa ggcggggcaa aataaattct 1500
cgggccgggc cataacc 1517

<210> 8
<211> 180

<212> PRT
 <213> Glycine max

<400> 8
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 Ser Leu Gly Ile Ala Ile Arg Asn Ile Tyr Lys Asp Gly Gly Val Gly
 35 40 45
 Ala Phe Tyr Ala Gly Ile Ser Pro Thr Leu Val Gly Met Leu Pro Tyr
 50 55 60
 Ser Thr Cys Phe Tyr Phe Met Tyr Asp Thr Ile Lys Glu Ser Tyr Cys
 65 70 75 80
 Arg Thr Lys Ser Lys Lys Ser Leu Ser Arg Pro Glu Met Leu Leu Ile
 85 90 95
 Gly Ala Leu Ala Gly Phe Thr Ala Ser Thr Ile Ser Phe Pro Leu Glu
 100 105 110
 Val Ala Arg Lys Arg Leu Met Val Gly Ala Leu Gln Gly Lys Cys Pro
 115 120 125
 Pro Asn Met ala Ala Ala Leu Ser Glu Val Ile Arg Glu Glu Gly Leu
 130 135 140
 Lys Gly Leu Tyr Arg Gly Trp Gly Ala Ser Cys Leu Lys Val Met Pro
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 Ser Ser Gly Ile Thr Trp Met Phe Tyr Glu Ala Trp Lys Asp Ile Leu
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 Leu Val Gln Asn
 180

<210> 9
 <211> 1506
 <212> DNA
 <213> Glycine max

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 atgtcgtctt ccaactccaa aacaaaaacc ctttcttcac tctactctg caactctaag 180
 cctcagcctc aggaaggtaa catggcattg gaatcccaac cgcagaagaa caagtatgga 240
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 aactctacct ttgattttca atttccccca attacaaatt ttcttggctc tagagagggt 360
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 atcaatttca acttatcttt atcttggatt tcaccagttg ccacgcggcg tgcagctgct 720
 ggaattgcta gcaactctgt atgccatccc cttgaagttt tgaaggaccg gttaactgta 780

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tgttttttatt tcatgtatga tacaataaag gaatcttact gccggaccaa aagtaagaaa 960
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gggtaaggaa aaataattat tcggaaatta aagttgtttt gccatggcag ccagctggct 1380
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<210> 10
<211> 410
<212> PRT
<213> Glycine max

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Val Lys Asn Asn Phe Thr Glu Pro Thr Arg Pro Gln Ile Lys Asn Lys
          20          25          30

Met Ser Ser Ser Asn Ser Lys Thr Lys Thr Pro Ser Ser Leu Ser Leu
          35          40          45

Cys Asn Ser Lys Pro Gln Pro Gln Glu Gly Asn Met Ala Leu Glu Ser
          50          55          60

Gln Pro Gln Lys Asn Lys Tyr Gly His Gly Val Phe Gly Asp Val Tyr
          65          70          75          80

Ser Ile Ile Lys Glu Met Glu Ile Asp His His Asn Asn Ser Thr Phe
          85          90          95

Asp Phe Gln Phe Pro Pro Ile Thr Asn Phe Leu Gly Ser Arg Glu Val
          100          105          110

Arg Glu Phe Ile Ser Gly Ala Leu Ser Gly Ala Met Thr Lys Ala Ile
          115          120          125

Leu Ala Pro Leu Glu Thr Ile Arg Thr Arg Met Val Val Gly Val Gly
          130          135          140

Ser Lys Asn Ile Ala Gly Ser Phe Ile Glu Val Ile Glu Gln Gln Gly
          145          150          155          160

Trp Gln Gly Leu Trp Ala Gly Asn Met Ile Asn Met Leu Arg Ile Val
          165          170          175

Pro Thr Gln Ala Ile Glu Leu Gly Thr Phe Glu Cys Val Lys Arg Ala
          180          185          190

Met Thr Ser Leu His Glu Lys Trp Glu Ser Asn Glu Tyr Pro Lys Leu
          195          200          205

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Gln Ile Gly Pro Ile Asn Phe Asn Leu Ser Leu Ser Trp Ile Ser Pro
 210 215 220
 Val Ala Ile Ala Gly Ala Ala Ala Gly Ile Ala Ser Thr Leu Val Cys
 225 230 235 240
 His Pro Leu Glu Val Leu Lys Asp Arg Leu Thr Val Ser Pro Glu Thr
 245 250 255
 Tyr Pro Ser Leu Gly Ile Ala Ile Arg Asn Ile Tyr Lys Asp Gly Gly
 260 265 270
 Val Gly Ala Phe Tyr Ala Gly Ile Ser Pro Thr Leu Val Gly Met Leu
 275 280 285
 Pro Tyr Ser Thr Cys Phe Tyr Phe Met Tyr Asp Thr Ile Lys Glu Ser
 290 295 300
 Tyr Cys Arg Thr Lys Ser Lys Lys Ser Leu Ser Arg Pro Glu Met Leu
 305 310 315 320
 Leu Ile Gly Ala Leu Ala Gly Phe Thr Ala Ser Thr Ile Ser Phe Pro
 325 330 335
 Leu Glu Val Ala Arg Lys Arg Leu Met Val Gly Ala Leu Gln Gly Lys
 340 345 350
 Cys Pro Pro Asn Met Ala Ala Ala Leu Ser Glu Val Ile Arg Glu Glu
 355 360 365
 Gly Leu Lys Gly Leu Tyr Arg Gly Trp Gly Ala Ser Cys Leu Lys Val
 370 375 380
 Met Pro Ser Ser Gly Ile Thr Trp Met Phe Tyr Glu Ala Trp Lys Asp
 385 390 395 400
 Ile Leu Leu Val Gln Asn Gly Asn Pro Leu
 405 410

<210> 11
 <211> 504
 <212> DNA
 <213> Glycine max

<400> 11
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 tggcttgtat agaggtttgg gaccaagttg cttaaaattg gttcctgctg ctgggatttc 180
 tttcatgtgc tacgaagctt gcaagaggat acttggttgaa aatgaacaag attaattaca 240
 agtggatcac tgcatttct tccatggga tatattggca ttgttttgtg tttttgaaga 300
 gggaaataat ttgtcgagct aatttttggt tttgcagatt ttgcttttcc ttgcatattt 360
 gaccatttca actagggtgt ttcttttaag ttgcattggc ttttaaggaaa aaagttgtat 420
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 aaaaaaaaaa aaaaaaaaaa aaaa 504

<210> 12
 <211> 76
 <212> PRT
 <213> Glycine max

<400> 12
 Ala Pro Phe Pro Leu Glu Val Val Val Lys His Met Gln Ala Gly Ala
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 20 25 30
 Leu Lys Lys Glu Gly Val Gly Gly Leu Tyr Arg Gly Leu Gly Pro Ser
 35 40 45
 Cys Leu Lys Leu Val Pro Ala Ala Gly Ile Ser Phe Met Cys Tyr Glu
 50 55 60
 Ala Cys Lys Arg Ile Leu Val Glu Asn Glu Gln Asp
 65 70 75

<210> 13
 <211> 1089
 <212> DNA
 <213> Glycine max

<400> 13
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 ggatggaagg gcttgttcag aggcaathtt gtaaacaatca tccgagttgc gccaaagcaag 180
 gccattgagt tatttgcata tgacactgtc aagaagcaat tatctccgaa acctggagag 240
 cagcctataa tcccaattcc cccctcatca attgcgggtg ctggtgctgg tgtagctct 300
 accctatgta cataccctct tgaactactc aaaactcgcc tctactgttca gagaggggtg 360
 tacaagaact tactcgacgc atttgtgagg atcgttcaag aggaagggtc tgcagaattg 420
 tatagggggc tcgcccctag tctaattggt gtaatccctt atgctgcaac aaactacttt 480
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 agctaatttt tggtttttgc gattttgctt ttccttgcat atttgaccat ttcaactagg 960
 gtgtttcttt taagttgcat tggctttaag gaaaaaagt gtattgatta cagactctaa 1020
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 aaaaaaaaaa 1089

<210> 14
 <211> 272
 <212> PRT
 <213> Glycine max

<400> 14
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 Arg Thr His Leu Met Val Gly Ser Cys Gly His Ser Thr Ile Gln Val
 20 25 30
 Phe Gln Ser Ile Met Glu Thr Asp Gly Trp Lys Gly Leu Phe Arg Gly
 35 40 45

<222> (383)
 <223> n = a, c, g or t

<220>
 <221> unsure
 <222> (449)
 <223> n = a, c, g or t

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 cgctcgctc gtcattggaca agaagaactg gttattgcgg ccggtccctg aggtcgctt 180
 cccttgagc tcgagcccg agtccaggag cttggacttc ccacgcaggg ctctgttcgc 240
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 ggctcggccc gccgacgacg tctcacacca agctcgcatc cgcggggcgag gcgggcgtcc 360
 agaaggccca gaaggcgaaa aangggcaaaa agcagcagct gagtctgaag gaagggtgagg 420
 ggtcaagatc ggcaacccgc acctgcggn 449

<210> 16
 <211> 109
 <212> PRT
 <213> Triticum aestivum

<220>
 <221> UNSURE
 <222> (104)
 <223> Xaa = any amino acid

<400> 16
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 20 25 30
 Glu Val Ala Phe Pro Trp Ser Ser Gln Pro Glu Ser Arg Ser Leu Asp
 35 40 45
 Phe Pro Arg Arg Ala Leu Phe Ala Ser Val Gly Leu Ser Leu Ser His
 50 55 60
 Gly Ala Pro Pro Val Ala Arg Glu His Asp Gly Lys Ala Arg Pro Ala
 65 70 75 80
 Asp Asp Val Ser His Gln Ala Arg Ile Arg Gly Arg Gly Gly Arg Pro
 85 90 95
 Glu Gly Pro Glu Gly Glu Lys Xaa Gln Lys Ala Ala Ala
 100 105

<210> 17
 <211> 1625
 <212> DNA
 <213> Triticum aestivum

<400> 17
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aagatcggca acccgcacct gcggcggtcg gtccagggcg ccatcgccgg cgccgtgtcg 480
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ttccgcgcca acgcccgtcaa cgtcctccgc gtcgcgccaa gcaaggccat cgagcacttc 660
acttacgaca cggcgaagaa gtacctgacc ccggaggccg gcgagccagc caaggtcccc 720
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cccatggagc tcgtcaagac ccgtctcacc atcgagaagg acgtgtacga caacctcctc 840
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<210> 18
<211> 433
<212> PRT
<213> Triticum aestivum

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<400> 18
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Ala Ser Leu Val Met Asp Lys Lys Asn Trp Leu Leu Arg Pro Val Pro
      20             25             30

Glu Val Ala Phe Pro Trp Ser Ser Gln Pro Glu Ser Arg Ser Leu Asp
  35             40             45

Phe Pro Arg Arg Ala Leu Phe Ala Ser Val Gly Leu Ser Leu Ser His
  50             55             60

Gly Ala Pro Pro Val Ala Arg Glu His Asp Gly Lys Ala Arg Pro Ala
  65             70             75             80

Asp Asp Val Ala His Gln Leu Ala Ala Ala Gly Glu Ala Gly Val Gln
      85             90             95

Lys Ala Gln Lys Ala Lys Lys Ala Lys Lys Gln Gln Leu Ser Leu Arg
  100            105            110

Lys Val Arg Val Lys Ile Gly Asn Pro His Leu Arg Arg Leu Val Ser
  115            120            125

Gly Ala Ile Ala Gly Ala Val Ser Arg Thr Phe Val Ala Pro Leu Glu
  130            135            140

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Thr Ile Arg Thr His Leu Met Val Gly Ser Ser Gly Ala Asp Ser Met
 145 150 155 160
 Ala Gly Val Phe Arg Trp Ile Met Arg Thr Glu Gly Trp Pro Gly Leu
 165 170 175
 Phe Arg Gly Asn Ala Val Asn Val Leu Arg Val Ala Pro Ser Lys Ala
 180 185 190
 Ile Glu His Phe Thr Tyr Asp Thr Ala Lys Lys Tyr Leu Thr Pro Glu
 195 200 205
 Ala Gly Glu Pro Ala Lys Val Pro Ile Pro Thr Pro Leu Val Ala Gly
 210 215 220
 Ala Leu Ala Gly Val Ala Ser Thr Leu Cys Thr Tyr Pro Met Glu Leu
 225 230 235 240
 Val Lys Thr Arg Leu Thr Ile Glu Lys Asp Val Tyr Asp Asn Leu Leu
 245 250 255
 His Ala Phe Val Lys Ile Val Arg Asp Glu Gly Pro Gly Glu Leu Tyr
 260 265 270
 Arg Gly Leu Ala Pro Ser Leu Ile Gly Val Val Pro Tyr Ala Ala Ala
 275 280 285
 Asn Phe Tyr Ala Tyr Glu Thr Leu Arg Gly Val Tyr Arg Arg Ala Ser
 290 295 300
 Gly Lys Glu Glu Val Gly Asn Val Pro Thr Leu Leu Ile Gly Ser Ala
 305 310 315 320
 Ala Gly Ala Ile Ala Ser Thr Ala Thr Phe Pro Leu Glu Val Ala Arg
 325 330 335
 Lys Gln Met Gln Val Gly Ala Val Gly Gly Arg Gln Val Tyr Lys Asn
 340 345 350
 Val Leu His Ala Met Tyr Cys Ile Leu Glu Lys Glu Gly Thr Ala Gly
 355 360 365
 Leu Tyr Arg Gly Leu Gly Pro Ser Cys Ile Lys Leu Met Pro Ala Ala
 370 375 380
 Gly Ile Ser Phe Met Cys Tyr Glu Ala Cys Lys Lys Ile Leu Val Asp
 385 390 395 400
 Glu Lys Glu Asp Gly Gly Ala Ala Glu Pro Gln Glu Glu Thr Glu Thr
 405 410 415
 Gly Gln Ala Gly Gly Gln Ala Ala Pro Lys Ser Ser Asn Gly Asp Arg
 420 425 430
 Pro

<210> 19

<211> 1267
 <212> DNA
 <213> Triticum aestivum

<400> 19
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 caatgggaat tcatctacgg aggtgtttga ctccatcatg aagaatgaag gatggactgg 180
 gttgttcgcg ggcaatttgg ttaatgtcat tcgagtcgcc ccgagcaaag caatcgagct 240
 ttttgccctt gatacagcta agaagttcct aacccccaaa tctggggaag aacagaagat 300
 cccaatccct ccttcactag tggcaggagc ttttgctggt gtcagctcaa ctctgtgtac 360
 atacctctg gaactaatta agactcgatt aaccatacag agaggtgtgt atgataactt 420
 cctccatgca tttgtgaaaa ttgtccgtga agaaggccct gctgagctgt atagaggctt 480
 aacccccagt ctaatcggag tgggtgccata tgcagcaacc aactacttcg cgtatgacac 540
 ccttaagaag gtgtacaaga aaatgttcaa gacaaatgaa atcggcaacg ttccaaccct 600
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 tcgcaagcac atgcaagtcg gagctgttgg cgcccggaag gtatacaaga acatgcttca 720
 cgctctcctg accattctcg aggacgaagg ggttgggggc ctctacagag gactggggcc 780
 tagttgcatg aagctggtgc ctgctgctgg gatttcgttt atgtgctacg aagcttgcaa 840
 gaagatactg attgaggaag agaacgaatg aagcgttctt caacagcggc gtcataaagg 900
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 aaaaaaa 1267

<210> 20
 <211> 289
 <212> PRT
 <213> Triticum aestivum

<400> 20
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 Ile Ala Gly Ala Val Ser Arg Thr Val Val Ala Pro Leu Glu Thr Ile
 20 25 30
 Arg Thr His Leu Met Val Gly Ser Asn Gly Asn Ser Ser Thr Glu Val
 35 40 45
 Phe Asp Ser Ile Met Lys Asn Glu Gly Trp Thr Gly Leu Phe Arg Gly
 50 55 60
 Asn Leu Val Asn Val Ile Arg Val Ala Pro Ser Lys Ala Ile Glu Leu
 65 70 75 80
 Phe Ala Phe Asp Thr Ala Lys Lys Phe Leu Thr Pro Lys Ser Gly Glu
 85 90 95
 Glu Gln Lys Ile Pro Ile Pro Pro Ser Leu Val Ala Gly Ala Phe Ala
 100 105 110
 Gly Val Ser Ser Thr Leu Cys Thr Tyr Pro Leu Glu Leu Ile Lys Thr
 115 120 125
 Arg Leu Thr Ile Gln Arg Gly Val Tyr Asp Asn Phe Leu His Ala Phe

130		135		140
Val Lys Ile Val Arg Glu Glu Gly Pro Ala Glu Leu Tyr Arg Gly Leu				
145		150		155
Thr Pro Ser Leu Ile Gly Val Val Pro Tyr Ala Ala Thr Asn Tyr Phe				
	165		170	175
Ala Tyr Asp Thr Leu Lys Lys Val Tyr Lys Lys Met Phe Lys Thr Asn				
	180		185	190
Glu Ile Gly Asn Val Pro Thr Leu Leu Ile Gly Ser Ala Ala Gly Ala				
	195		200	205
Ile Ser Ser Thr Ala Thr Phe Pro Leu Glu Val Ala Arg Lys His Met				
	210		215	220
Gln Val Gly Ala Val Gly Gly Arg Lys Val Tyr Lys Asn Met Leu His				
	225		230	235
Ala Leu Leu Thr Ile Leu Glu Asp Glu Gly Val Gly Gly Leu Tyr Arg				
	245		250	255
Gly Leu Gly Pro Ser Cys Met Lys Leu Val Pro Ala Ala Gly Ile Ser				
	260		265	270
Phe Met Cys Tyr Glu Ala Cys Lys Lys Ile Leu Ile Glu Glu Glu Asn				
	275		280	285

Glu

<210> 21
 <211> 436
 <212> PRT
 <213> Zea mays

<400> 21
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Ser Trp Ser Ser Leu Gln Val Pro Ala Val Ala Phe Pro Trp Lys Pro
20 25 30
Arg Gly Gly Lys Thr Gly Gly Leu Glu Phe Pro Arg Arg Ala Met Phe
35 40 45
Ala Ser Val Gly Leu Asn Val Cys Pro Gly Val Pro Ala Gly Arg Asp
50 55 60
Pro Arg Glu Pro Asp Pro Lys Val Val Arg Ala Ala Asp Asn Cys Asp
65 70 75 80
Ile Ala Ala Ser Leu Ala Pro Pro Phe Pro Gly Ser Arg Pro Pro Gly
85 90 95
Arg Arg Gly Arg Gly Ser Glu Glu Glu Glu Ala Glu Gly Arg Arg His
100 105 110

Glu Glu Ala Ala Ala Ala Gly Arg Ser Glu Pro Glu Glu Gly Gln Gly
 115 120 125
 Gln Asp Arg Gln Pro Ala Pro Ala Arg Leu Val Ser Gly Ala Ile Ala
 130 135 140
 Gly Ala Val Ser Arg Thr Phe Val Ala Pro Leu Glu Thr Ile Arg Thr
 145 150 155 160
 His Leu Met Val Gly Ser Ile Gly Val Asp Ser Met Ala Gly Val Phe
 165 170 175
 Gln Trp Ile Met Gln Asn Glu Gly Trp Thr Gly Leu Phe Arg Gly Asn
 180 185 190
 Ala Val Asn Val Leu Arg Val Ala Pro Ser Lys Ala Ile Glu His Phe
 195 200 205
 Thr Tyr Asp Thr Ala Lys Lys Phe Leu Thr Pro Lys Gly Asp Glu Pro
 210 215 220
 Pro Lys Ile Pro Ile Pro Thr Pro Leu Val Ala Gly Ala Leu Ala Gly
 225 230 235 240
 Phe Ala Ser Thr Leu Cys Thr Tyr Pro Met Glu Leu Ile Lys Thr Arg
 245 250 255
 Val Thr Ile Glu Lys Asp Val Tyr Asp Asn Val Ala His Ala Phe Val
 260 265 270
 Lys Ile Leu Arg Asp Glu Gly Pro Ser Glu Leu Tyr Arg Gly Leu Thr
 275 280 285
 Pro Ser Leu Ile Gly Val Val Pro Tyr Ala Ala Cys Asn Phe Tyr Ala
 290 295 300
 Tyr Glu Thr Leu Lys Arg Leu Tyr Arg Arg Ala Thr Gly Arg Arg Pro
 305 310 315 320
 Gly Ala Asp Val Gly Pro Val Ala Thr Leu Leu Ile Gly Ser Ala Ala
 325 330 335
 Gly Ala Ile Ala Ser Ser Ala Thr Phe Pro Leu Glu Val Ala Arg Lys
 340 345 350
 Gln Met Gln Val Gly Ala Val Gly Gly Arg Gln Val Tyr Gln Asn Val
 355 360 365
 Leu His Ala Ile Tyr Cys Ile Leu Lys Lys Glu Gly Ala Gly Gly Leu
 370 375 380
 Tyr Arg Gly Leu Gly Pro Ser Cys Ile Lys Leu Met Pro Ala Ala Gly
 385 390 395 400
 Ile Ala Phe Met Cys Tyr Glu Ala Cys Lys Lys Ile Leu Val Asp Lys
 405 410 415
 Glu Asp Glu Glu Glu Asp Glu Ala Gly Gly Gly Glu Asp Asp Lys
 420 425 430

Lys Lys Val Glu
435